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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,522	02/05/2004	Damian A. Hajduk	1012-137C1	5415

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EXAMINER	
DEB, ANJAN K	

ART UNIT	PAPER NUMBER
2858	

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/772,522	HAJDUK ET AL.	
	Examiner	Art Unit	
	Anjan K. Deb	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,690,179 B2 to Hajduk et al. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Re claim 1, U.S. Patent No. 6,690,179 B2 (see claim 1) recites all of the claimed limitations for a method of sensing a mechanical property of a material (array of materials) comprising providing at least one capacitor having two structures, each structure including an electrode; placing a material onto the capacitor (material sample secured on to a surface of a structure); applying a voltage (voltage supply) to the capacitor through the electrodes to direct a

force to the material sample; monitoring a response of the material to the force with at least one response sensing device, wherein the response of the material is indicative of a mechanical property.

Re claims 10-12,19-21 U.S. Patent No. 6,690,179 B2 (see claim 1) recites all of the claimed limitations including materials has an area of less than about 50 mm^2 and thickness less than about 500 microns.

Re claims 2,3,17,18 U.S. Patent No. 6,690,179 B2 (see claim 11) recites all of the claimed limitations including mechanical property is Young's modulus, and selected from the group consisting of flexure, uniaxial extension, biaxial compression,
shear, stress and strain at failure, toughness, Young's modulus, complex modulus, adhesion, and combinations thereof.

Re claim 4, U.S. Patent No. 6,690,179 B2 (see claim 5) recites all of the claimed limitations including method comprising regulating environmental
conditions of the material.

Re claim 5, U.S. Patent No. 6,690,179 B2 (see claim 10) recites all of the claimed limitations including response sensing device selected from the group consisting of an optical selected from the group consisting of optical reflectance, optical interferometry, shadow illumination, and combinations thereof; an electrical response sensing device selected from the

group consisting of capacitance, resistance, electromechanical switching, and combinations thereof.

Re claims 6,7 U.S. Patent No. 6,690,179 B2 (see claim 11) recites all of the claimed limitations including securing the material to one of the structures (see claim 1) wherein the material is secured onto the structure mechanically (spacer), magnetically/electromagnetically/electromechanically (magnetic force), and combinations thereof.

Re claims 8,9 U.S. Patent No. 6,690,179 B2 (see claim 9) recites all of the claimed limitations including voltage selected from the group consisting of oscillatory, non-oscillatory, and combinations thereof wherein the voltage is supplied by voltage supply selected from the group consisting of a variable voltage power supply, a programmable constant current source and a voltmeter, and combinations thereof (see claim 8).

Re claim 13, U.S. Patent No. 6,690,179 B2 (see claim 2) recites all of the claimed limitations including method is capable of screening at least two of said samples of said library simultaneously.

Re claim 14, U.S. Patent No. 6,690,179 B2 did not claim "method is capable of sensing a mechanical property of at least twenty-four materials of the library Simultaneously". [MPEP

2144.04. Duplication of Parts. In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). Court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced].

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify U.S. Patent No. 6,690,179 B2 by adding twenty-four materials simultaneously to the plurality of capacitors for increasing screening through put rate (increasing the rate at which materials are tested).

Re claim 15, U.S. Patent No. 6,690,179 B2 (see claim 3) recites all of the claimed limitations including screening throughput rate of the library is no greater than about ten minutes.

Re claim 16, U.S. Patent No. 6,690,179 B2 (see claim 4) recites all of the claimed limitations including force is applied to each of the materials in sequential order and screening throughput rate is no greater than 10 minutes per material.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1,6 are rejected under 35 U.S.C. 102(e) as being anticipated by Itoh et al. (US 6,507,197 B1).

Re claims 1,6 Itoh et al. discloses a method and apparatus of determining material property (thickness of dielectric film) comprising providing at least one capacitor having two structures (electrodes) each structure including an electrode (Fig. 2), placing/securing a material (sample) onto the capacitor, applying a voltage (60',80') to the capacitor through the electrodes to direct a force to the material sample, monitoring a response (30)(Fig. 1) of the material to the force with at least one response sensing device (20,30,50)(Fig. 1), wherein the response of the material is indicative of a mechanical property.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 5,10-16, 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (US 6,507,197 B1) in view of Mansky et al. (US 6,438,497 B1).

Re claims 12-14, 19 Itoh et al. did not expressly disclose screening plurality of samples simultaneously.

Mansky discloses a method of screening plurality of samples simultaneously (Fig. 16E).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Itoh et al. by adding plurality of sensors disclosed by Mansky (Fig. 16E) connected to plurality of capacitors for simultaneous testing of samples to achieve faster results (screening throughput).

Re claims 15,16 Itoh et al. did not expressly disclose screening throughput rate of materials is no greater than about ten minutes.

Mansky discloses a method of measuring one material property of a sample every 2 minutes (claim 1).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Itoh et al. by adding measuring one material property of a sample every 2 minutes disclosed by Mansky for achieving target throughput.

Re claims 5,10-11, 20, 21 Itoh et al. did not expressly disclose materials has an area of less than about 50 mm^2 and thickness less than about 500 microns.

Mansky discloses (Fig. 1A)(Fig. 8) sensor array 10 wherein samples have area of less than about 50 mm^2. The samples preferably have small lateral dimensions (e.g. 1 mm or less)(column 13 lines 59-61), to allow more samples to be deposited on a given area and sensor can be used in conjunction with a camera or other optical sensing device (column 12 lines 53-65), allowing even more material properties to be measured simultaneously. Optical sensing is broadly interpreted as including optical reflectance, optical interferometry, shadow illumination, and a combination thereof.

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Matsiev et al. by adding optical sensing disclosed by Mansky, and samples having area less than 50 mm^2 disclosed by Mansky, so that even more material properties can be measured simultaneously, and having sample thickness of less than about 500 microns disclosed by Mansky which are easily produced by chemical vapor deposition and other techniques and corresponds to typical thickness' of thin film samples under study.

7. Claims 2,3,17,18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (US 6,507,197 B1) and Mansky et al. (US 6,438,497 B1) in view of Tschoegl (US 3,933,032).

Re claims 2,3,17,18, Itoh et al. and Mansky et al. did not expressly disclose measuring mechanical properties including uniaxial extension, biaxial compression, shear, stress and strain at failure, toughness, Young's modulus, complex modulus, and a combination thereof.

Tschoegl discloses method and apparatus for measuring mechanical properties of a material including Young's modulus by applying a force to material and measuring a response signal as a function of displacement to determine material properties (column 3 lines 34-50).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Itoh et al. and Mansky et al. by adding measuring mechanical properties of material including Young's modulus disclosed by Tschoegl for material screening. Measuring material dynamic properties disclosed by Tschoegl is broadly interpreted to include uniaxial extension, biaxial compression, shear, stress and strain at failure, and toughness of material.

8. Claim 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh et al. (US 6,507,197 B1)

Re claim 7, Itoh et al. did not expressly disclose regulating environmental conditions of samples.

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Itoh et al. by adding regulating environmental conditions such as temperature for determining material property at a specified temperature.

Re claims 8,9 Itoh et al. discloses all of the claimed limitations including voltage selected from the group consisting of oscillatory 80, non-oscillatory 60, and combinations thereof wherein the voltage is supplied by voltage supply selected from the group consisting of a variable voltage power supply 60.

Itoh et al did not expressly disclose a programmable constant current source and a voltmeter but would have obvious since these are obvious variants of the power supply system disclosed by Itoh et al.

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Itoh et al. by adding programmable constant current source and a voltmeter, which are obvious variants of the power supply system disclosed by Itoh et al.

Conclusion

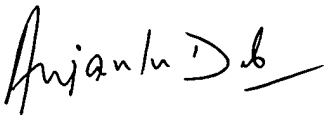
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Matey (US 4,481,616) discloses capacitance type probe for measuring mechanical properties of a material including Young's modulus.

Yorkgitis et al. (US 6,037,180) discloses method of monitoring mechanical properties of polymeric material, by measuring the capacitance of a parallel plate capacitor containing the material.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lefkowitz Edwards can be reached at 571-272-2180.



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